REMARKS

These remarks are responsive to the Office Action dated September 6, 2006. Currently claims 1-18 are pending with claims 1, 7, and 17 being independent. Claims 1, 4, 10, 11, and 17 are amended to expedite prosecution of the application to allowance.

35 U.S.C. 112

In the September 6, 2006 Office Action, the Examiner rejected claims 1, 3, 10, and 11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Applicants would like to point out that the rejected limitation of "the replication of files" does not appear in claim 3, but instead appears in claim 4. Applicants amended claims 1, 4, 10, and 11 to accommodate Examiner's rejections. Thus, the rejections are now moot and the Examiner is requested to reconsider and withdraw his rejections of claims 1, 3, 10, and 11.

35 U.S.C. 102(e)

In the September 6, 2006 Office Action, the Examiner rejected claims 7-10 and 14-16 as being anticipated by U.S. Patent No. 6,847,982 to Parker et al. (hereinafter, "Parker"). This rejection is respectfully traversed.

Claim 7 recites, *inter alia*, a method for protecting data including storing a version of a first file within a set of files on a primary disk storage system; examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files; and replicating the version of the first file to repositories specified by the protection policy, the specified repositories including at least one local repository and at least one remote repository.

Parker discloses an intelligent data inventory and asset management software system. (Parker, Col. 7, lines 18-23). The Parker system includes an Akashic File Clerk that maintains an inventory database, which includes electronic signatures for every file on a work station and all new and changed files. (Parker, Col. 7, line 24-28). Parker allows a client to determine which files are critical and which are not critical, then Parker runs inventories to capture the files that have changed and forwards the changed files to an Akashic Vault for storage and processing. (Parker, Col. 7, lines 28-35). During inventories, Parker identifies files that have 1) changed since the last inventory, 2) been deleted since the last inventory, 3) been added since the last inventory. (Parker, Col. 8, lines 17-26). Parker does not examine a protection policy associated with the set of files to determine where and how to protect files associated with the set of files, as recited in claim 7. Parker's Akashic File Clerk that contains signatures of files, runs an inventory on the changed files, and then stores the files in the Akashic Vault, does not examine a protection policy and determine where and how to protect files.

Parker's Akashic Vault is a computer that is attached as a node to the client's network which stores captured files. (Parker, Col. 7, lines 44-46). After capturing files, Parker's Vault generates reverse and forward deltas, then deletes the previous version and archives the newest compressed version of the file. (Parker, Col. 9, line 54 to Col. 10, line 4). Parker generates a list of forward delta(s) and copies of the new files and sends them to an offsite Library System. (Parker, Col. 10, lines 5-8). This is different than replicating the version of the first file to repositories specified by the protection policy, the specified repositories including at least one local repository and at least one remote repository, as recited in claim 7. As such, Parker does not disclose all elements of claim 7 and claim 7 should be allowed.

Claims 8-10 and 14-16 are dependent on the independent claim 7. As such, claims 8-10 and 14-16 are not anticipated by Parker for at least the reasons stated above with regard to claim 7. Hence, the rejection of claims 8-10 and 14-16 is respectfully traversed. The Examiner is requested to reconsider and withdraw his rejection of claims 8-10 and 14-16.

35 U.S.C. 103(a)

In the September 6, 2006 Office Action, the Examiner rejected claims 1-2, 6, and 17-18 as being unpatentable over a combination of U.S. Patent No. 6,163,856 to Dion et al. (hereinafter, "Dion") in view of U.S. Patent No. 5,78,395 to Whiting et al. (hereinafter, "Whiting"). This rejection is respectfully traversed.

In the Office Action, the Examiner stated that Dion discloses all of the elements of claim 1 but "does not teach a policy cache operative to store a protection policy associated with a set of files." The Examiner stated that Whiting teaches this element of claim 1. (Office Action, page 6).

Claim 1 recites, *inter alia*, a data protection system including a fileserver having: a filter driver operative to intercept input or output activity initiated by client file requests and to maintain a list of modified and created files since a prior backup, a file system in communication with the filter driver and operative to store client files, a policy cache operative to store a protection policy associated with a set of files, a mirror service in communication with the filter driver and with the policy cache, the mirror service operative to prepare modified and created files in the set of files to be written to a repository as specified in the protection policy associated with the set of files, a fileserver API coupled to the mirror service and operative to communicate with a repository, and a fileserver file transfer module in communication with the file system and operative to transfer files from the file system to at least one repository.

Dion discloses a file disaster recovery system that includes a geographical replication software, called Telescope, that captures state changes to the PXFS (a distributed/cluster file system) file system. (Dion, Abstract; Col. 9, lines 43-45). Telescope encodes state changes, at a local site, as operations and their parameters and then transmits them to a remote site. (Dion, Col. 9, lines 45-49). Telescope then decodes the operations and copies them to a file system running at a local site. (Dion, Col. 9, lines 49-55). This is different from a filter driver operative to maintain a list of modified and created files since a prior backup, as recited in claim 1 of the present application. Dion does not maintain a list of modified and created files, instead it simply copies a state of the system from the local site to the remote site, contrary to the suggestion of the Examiner and recitation of claim 1.

In addition to the Examiner's statement that Dion does not teach a policy cache (Office Action, page 6), Dion also fails to disclose, teach or suggest, *inter alia*, a mirror service in communication with the filter driver and with the policy cache, the mirror service operative to prepare modified and created files in the set of files to be written to a repository as specified in the protection policy associated with the set of files, a fileserver API coupled to the mirror service and operative to communicate with a repository, and a fileserver file transfer module in communication with the file system and operative to transfer files from the file system to at least one repository, as recited in claim 1. Instead, Dion discloses capturing state changes to the system, encoding them at a local site, and then copying them to a remote site. (Dion, Col. 9, lines 37-55).

Whiting does not cure the deficiencies of Dion. Whiting discloses a lower cost backup solution. (Whiting, Col. 4, lines 63-64). Whiting's solution creates four types of files during backup: new, unchanged, updated, and modified. (Whiting, Col. 7, lines 59-65). Each time a

backup set of files is migrated, Whiting's solution searches for matching files for each new or updated file. (Whiting, Col. 8, lines 8-16). Contrary to the Examiner's suggestion, Whiting fails to disclose, teach or suggest a policy cache operative to store a protection policy associated with a set of files, as recited in claim 1. Whiting identifies four types of files that its solution operates on during backup, but it does not disclose a policy cache that stores a protection policy.

Thus, neither Dion, Whiting, nor their combination disclose, teach or suggest all elements of claim 1, and claim 1 should be allowed.

Improper to combine the references

It is improper to combine Dion and Whiting to produce the claimed invention. Dion relates to file disaster recovery system that captures changes to the state of the systems and copies them to remote sites. In contrast, Whiting teaches a back-up file system that separates files into four categories during backup. Further, Dion's technology belongs to class 714 ("Error Detection/Correction and Fault Detection/Recovery"), subclass 4 ("of network", which is indented under the following subclasses: "Data Processing System Error or Fault Handling", "Reliability and Availability", "Fault Recovery", and "by masking or reconfiguration"). In contrast, Whiting's technology belongs to class 707 ("Data Processing: Database and File Management or Data Structures"), subclass 204 ("Archiving or Backup", which is indented under the following subclasses: "File or Database Maintenance" and "Coherency (e.g., same view to multiple users)"). Clearly, Dion and Whiting belong to different technological arts. Hence, it is improper to combine Dion and Whiting, as the Examiner attempted in the September 6, 2006 Office Action without some disclosed motivation other than the present application. See, MPEP 2143.01:

> "There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper.).

Even if one were to combine Dion and Whiting, the present invention is not realized. The combination of Dion and Whiting discloses a disaster recovery system that checks a state of the system and performs a backup by separating files into four separate categories. This is different from the present invention. The combination of Dion and Whiting fails to disclose, teach or suggest, *inter alia*, a filter driver operative to intercept input or output activity initiated by client file requests and to maintain a list of modified and created files since a prior backup, a file system in communication with the filter driver and operative to store client files, a policy cache operative to store a protection policy associated with a set of files, as recited in claim 1.

Thus, even the improper combination of Dion and Whiting does not render claim 1 obvious. As such, this rejection is respectfully traversed. The Examiner is requested to reconsider and withdraw his rejection of claim 1.

Additionally, Dion intercepts input and output activity for the purpose of updating a replicated image of the files that change. Dion is a file system replication product that maintains no historical versions of data at both sites, only the latest copy of data at remote sites. Dion does not support backup. In Dion, modified files are updated and then used to replace earlier versions of the files. Dion does not store file history, it only replicates a current copy of data. Further, Dion employs a log file update engine. All changes to a file are "played back" remotely with this log, but in the end, only the latest version of the file remains. Conventional replication systems,

such as Dion, suffer from a problem of local data corruption, which causes remote data to be corrupted almost immediately thereafter. One of the advantages of the present invention is that it guards against that by maintaining a complete version history at both sites. If a new version becomes corrupt, an earlier version of a file can be restored from either the local or the remote site. Further, Dion, as many other conventional replication systems, suffers from a problem of having to accidentally or maliciously deleting files from local and remote sites. In conventional systems, a local delete will cause a remote delete, and there will be no remaining data to recover from. Another advantage of the present invention is that it does not destroy accidentally deleted files in order to provide long term historical backup at both sites. Conventional replication systems, such as Dion, cannot recover from accidental or maliciously deleted files on their own.

Whiting employs check-summing to detect if two or more files are identical. When it discovers two or more identical files, it replaces all extra copies of files with pointers back to a single copy. Whiting further employs encryption of backup data. Whiting also performs Karp/Rabin fingerprinting of data to reduce the amount of disk storage consumed by the files they are storing. An advantage of the present invention is that it maintains both the primary storage system and the backup repository. The present invention recognizes which files in the backup repository should be associated with each other and performs a delta compression operation to extract only the parts of that file that have changed so that only these are maintained in the onsite and offsite backup repository. Whiting requires that client workstations copy backup data from their workstations' primary disk storage units to a pre-assigned location or directory on the backup fileserver so that that data can be backed up. An advantage of the present invention is that a fileserver acts as a primary storage and the local and remote backup repositories act like a disk-based backup system. Further, Whiting actually takes up additional storage space in the

backup fileserver to store metadata for unchanged files on every backup period. An advantage of the present invention is that it sends files that have been modified to the backup repository to be protected.

Claim 17 is patentable over the combination of Dion and Whiting for at least the reasons stated above with regard to claim 1. As such, the rejection of claim 17 is respectfully traversed. The Examiner is respectfully requested to reconsider and withdraw his rejection of claim 17.

Claims 2, 6, and 18 are dependent on the independent claims 1 and 17, respectively. Thus, claims 2, 6, and 18 are patentable over the combination of Dion and Whiting for at least the reasons stated above with regard to claim 1. Thus, the rejection of claims 2, 6, and 18 is respectfully traversed. The Examiner is requested to reconsider and withdraw his rejection of claims 2, 6, and 18.

In the September 6, 2006 Office Action, the Examiner rejected claims 3-5 under 35 U.S.C. 103(a) as being unpatentable over Dion in view of Whiting and further in view of U.S. Publication No. 2003/0070001 to Belknap et al. (hereinafter, "Belknap").

Claims 3-5 are dependent on independent claim 1. As such, claims 3-5 are patentable over the combination of Dion and Whiting for at least the reasons stated above with regard to claim 1. Belknap does not cure the deficiencies of the combination of Dion and Whiting. Belknap discloses a media manager which incorporates an application program interface (API) for converting high-level generic commands into device-level commands for output to a media device. (Belknap, Abstract). Further, Belknap determines whether a media object is located within a multimedia data storage system by searching an index of media objects stored within the system. (Belknap, para. [0063]-[0064]). Belknap fails to disclose, teach or suggest, *inter alia*, a filter driver operative to intercept input or output activity initiated by client file requests and to

maintain a list of modified and created files since a prior backup, a file system in communication with the filter driver and operative to store client files, a policy cache operative to store a protection policy associated with a set of files, as recited in claim 1. Thus, the combination of Dion, Whiting, and Belknap does not render claim 1 obvious. As such, claims 3-5 are note rendered obvious by the combination of Dion, Whiting, and Belknap. Thus, this rejection is respectfully traversed. The Examiner is requested to reconsider and withdraw his rejection of claims 3-5.

In the September 12, 2006 Office Action, the Examiner rejected claims 11-13 under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Santry et al., "Deciding when to forget in the Elephant file system" (hereinafter, "Santry"). This rejection is respectfully traversed.

Claims 11-13 are dependent on independent claim 7. As such, claims 11-13 are patentable over Parker for at least the reasons stated above with regard to claim 7. Santry does not cure the deficiencies of Parker. Santry discloses a file system that keeps old versions of the file for recovery purposes (Santry, pg. 111, section 1). In some instances, Santry does not keep old versions of the files and only keeps a single current version. (Santry, pg. 113, section 3.3). However, Santry fails to disclose, teach or suggest, *inter alia*, examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files, and replicating the version of the first file to repositories specified by the protection policy, the specified repositories including at least one local repository and at least one remote repository, as recited in claim 7. Thus, the combination of Parker and Santry does not render claim 7 obvious. As such, claims 11-13 are not rendered obvious by the combination of Parker

and Santry. Thus, the rejection of claims 11-13 is respectfully traversed. The Examiner is requested to reconsider and withdraw his rejection of claims 11-13.

No new matter has been added.

The claims currently presented are proper and definite. Allowance is accordingly in order and respectfully requested. However, should the Examiner deem that further clarification of the record is in order, we invite a telephone call to the Applicants' undersigned attorney to expedite further processing of the application to allowance.

Applicants believe that no additional fees are due with the filing of this Amendment. However, if any additional fees are required or if any funds are due, the USPTO is authorized to charge or credit Deposit Account Number: 50-0311, Customer Number: 35437, Reference Number: 25452-013.

Respectfully submitted,

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Boris A. Matvenko, Reg. No. 48,165
MINTZ LEVIN COHN FERRIS
GLOVSKY & POPEO, P.C.
Chrysler Center
666 Third Avenue, 24th Floor
New York, NY 10017
Tel: (212) 935-3000
Fax: (212) 983-3115